



Province of the
EASTERN CAPE
EDUCATION

Iphondo leMpuma Kapa: Isebe leMfundo
Provinsie van die Oos Kaap: Departement van Onderwys
Porafensie Ya Kapa Botjhabela: Lefapha la Thuto

NATIONAL SENIOR CERTIFICATE

KEREITI YA 12

LOETSE 2024

DISAENSE TSA TEMO P1

MATSHWAO: 150

NAKO: Dihora tse 2½

Pampiri ena ya dipotso e na le maqephe a 18.

DITAELO LE TLHAHISOLESEDING

1. Pampiri ena e na le dikarolo tse PEDI, e leng KAROLO YA A le KAROLO YA B.
2. Araba di dipotso KAOFELA BUKENG YA DIKARABO.
3. Qala potso E NNGWE LE E NNGWE leqepheng le LETJHA.
4. Nomora dikarabo ka tsela e nepahetseng ho ya ka mokgwa o sebedisitsweng pampiring ena ya dipotso.
5. O ka sebedisa khalekhuleitha e sa porokeramuweng.
6. Bontsha dikhalekhuleishene tsa hao KAOFELA, le difomula moo ho hlokehang.
7. Ngola ka mongolo o makgethe mme o balehang.

KAROLO YA A**POTSO YA 1**

1.1 Ho fanwe ka dikgetho tse fapaneng e le dikarabo tse ka nepahalang dipotsong tse latelang. Kgetha karabo e nepahetseng mme o ngole tlhaku feela (A–D) pela dinomoro tsa potso (1.1.1 ho ya ho 1.1.10) BUKENG YA DIKARABO, mohlala 1.1.11 D.

1.1.1 Seteraketjha se maboteng a dismall intestine se nyollang absorption surface.

- A Papillae
- B Caruncles
- C Villi
- D Lieberkühn gland

1.1.2 ... ya mpa ya kgomo ka nako tseding e rifereshwa ho mpa ya 'hardware stomach' hobane ke moo diforeign obojekthe tse jwalo ka terete ditshwarehang teng.

- A Abomasum
- B Omasum
- C Rumen
- D Reticulam

1.1.3 Maemo a loketseng microbial activity.

- (i) Maemo a Anaerobic
- (ii) Ho ntshwa hwa di waste products
- (iii) Dithemepretjhara tse tlase
- (iv) Slightly acidic medium

Kgetha khombineishene e NEPAHETSENG:

- A (i), (ii) le (iii)
- B (i), (iii) le (iv)
- C (i), (ii) le (iv)
- D (ii), (iii) le (iv)

1.1.4 Tse latelang ke diprodakthe tsa digestion ya cellulose, kante ho ...

- A oxygen.
- B vitamin B complex
- C methane
- D volatile fatty acids.

1.1.5 Difeketha tse nyollang porodakeshene ya di phoofolo tlasa intensive farming.

- (i) Cultivar
- (ii) Nutrition
- (iii) Reproduction
- (iv) Management

Kgetha khombineishene e NEPAHETSENG:

- A (i), (ii) le (iii)
- B (i), (iii) le (iv)
- C (i), (ii) le (iv)
- D (ii), (iii) le (iv)

1.1.6 Fasilithi e sebediswang ho laola mekgasi ho elastreishene e ka tlase e bitswa ...



- A spray dip.
- B plunge dip.
- C pour-on dip.
- D foot dip.

1.1.7 Letshwa le bontshang hore pooho HA E in distress.

- A Pawing
- B Snorting
- C Rapid tail movements
- D Grazing with other cattle

1.1.8 Flight zone ya kgomo ke speisi se ...

- A e potapotileng.
- B ka pela hlooho.
- C haufi le mohatla.
- D dipakeng tsa manaka.

1.1.9 Dikgomo tse hangwang di tshanela ho fetjwa ... ration.

- A maintenance
- B production
- C maintenance and production
- D maintenance and nutritive

1.1.10 Tatellano e nepahetseng ya ho aha spermatozoa:

- A Spermatogonium → primary spermatocyte → secondary spermatocyte → spermatids
- B Spermatogonium → primary spermatocyte → spermatids → secondary spermatocyte
- C Spermatogonium → secondary spermatocyte → spermatids → primary spermatocyte
- D Primary spermatocyte → secondary spermatocyte → spermatogonium → spermatids (10 x 2) (20)

- 1.2 Bontsha hore ekaba dithaloso tse ho KHOLOMO YA B di tsamaellana le **A FEELA, B FEELA, A LE B KA BOBEDI kapa HA E YO** ho dintlha tse ho KHOLOMO YA A. Ngola **A feela, B feela, A le B ka bobedi** kapo **HA E YO** pela dinomoro tsa potso (1.2.1 ho ya ho 1.2.5) BUKENG YA DIKARABO, mohlala 1.2.6 B feela.

KHOLAMO YA A			KHOLAMO YA B
1.2.1	A: B:	Protozoa le bacteria Fungi le virus	Di micro-organisms tse bohlokoa ka hara rumen ya dikgomo
1.2.2	A: B:	1 : 7,25 1 : 6,25	Nutritive ratio ya fidi e nang le total digestible nutrients (TDN) ya 75% le DP ya 12%
1.2.3	A: B:	Wood shavings Grass straw	Matheriele e sebediswang ho al ka matlung a dikgoho
1.2.4	A: B:	Intramuscular Intravenous	Injekeshene e hlajwang hantle mothapong
1.2.5	A: B:	Viable pH e tshwanel ho ba 5,4–5,9	Characteristic ya semene e nepahetseng

(5 x 2) (10)

- 1.3 Fana ka lentswe le le LENG bakeng sa tlhaloso ka nngwe ho tse latelang. Ngola lentswe feela pela dinomoro tsa potso (1.3.1 ho ya ho 1.3.5) BUKENG YA DIKARABO.

- 1.3.1 Prophathi ya di vithamene e sebediswang ho di classify ho ya ka di hlopha tse pedi tsa mantlha
- 1.3.2 Mafu a non-contagious a bakwang ke di nutritional deficiencies
- 1.3.3 Lero le tshireletsang embryo kgahlano le ho otlana
- 1.3.4 Protrusion ya vagin ho vulva
- 1.3.5 Lebeso le tswang matstsing a mararo a pele ka mora ho tswala

(5 x 2) (10)

1.4 Fetola MANTSWE a SEHELLETSWENG MELA polelong ka NNGWE ho tse latelang hore di nepahale. Ngola karabo e nepahetseng feela pela dinomoro tsa potso (1.4.1 ho ya ho 1.4.5) BUKENG YA DIKARABO.

1.4.1 Nutritive ratio ke tekanyetso ya boleng ba poroteini ka hara fidi.

1.4.2 Menwang e hlasela maqeba abulehileng le di insect bites ho sebakeng se itseng mohatleng wa nku.

1.4.3 Hypoplasia e hlalosa boemo ha ditesticle di sa theohele sekrothamong.

1.4.4 Monozygotic twins di hlahiswa ho tloha ho di ova tse pedi tse sa tshwaneng tse ntshuweng ka nako ya ovulation tsa ba fertilised ke di spermatozoa tse pedi tse sa tshwaneneng.

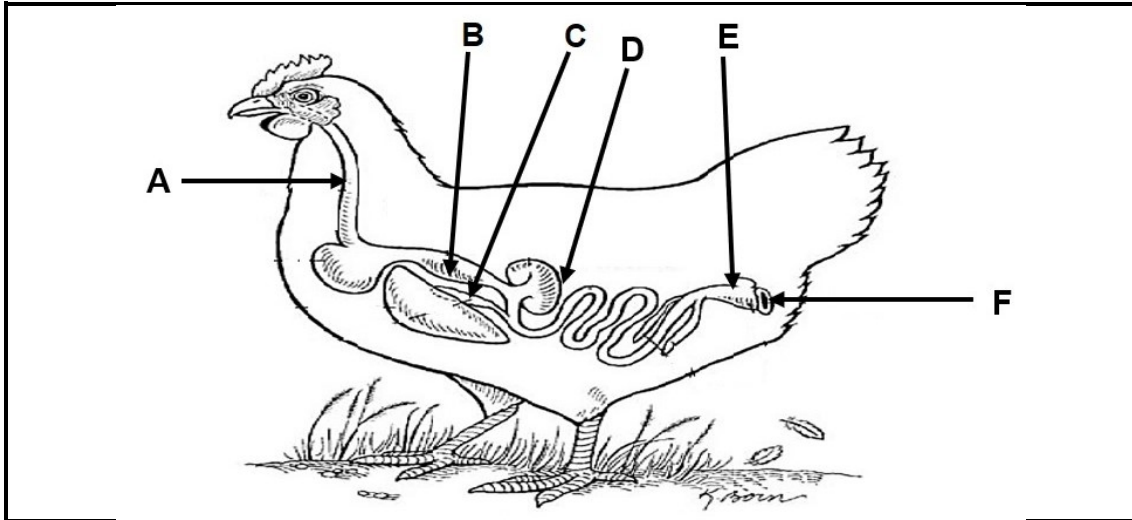
1.4.5 Dry period ke nako ya tlhahiso ya lebese e qalang ka mora ho tswala e nkang matsatsi a 305 dikgomong. (5 x 1) (5)

MATHSWAO KAOFELA A KAROLO YA A: 45

KAROLO YA B**POTSO YA 2: PHEPO YA DIPHOFOLO.**

Qala potso ena leqepheng le LETJHA.

2.1 Ithute tayakeramo e ka tlase mme o arabe dipotso tse latelang.



2.1.1 Hlophisa phoofolo ya polasi e tayakeramong e ka hodimo o itshetlehile ho alimentary canal ya yona. (1)

2.1.2 Qolla TLHAKU ya karolo ho tayakeramo e ka hodimo moo ho etsahalang tse latelang:

- (a) E fupere substance e thusetsang ho abosoposhene ya di fatty acids le glycerol (1)
- (b) khomone opening ya digestive le diexcretory system (1)
- (c) E tsamaellana le true stomach ya nku (1)
- (d) E tshwauwa ka dimasculine wall tsa mechanical digestion (1)

2.2 Diphoofole di fumana diahammele tsa tsona ho tloha ho diporoteini, khabohaetereiti, dilipitsi, le divithamini tseo di dijang. Di menirale le tsona ke karolo ya daethe ebile di hlokeha ka dikhwantithi tse fapaneng. Diphoofole di hloka di reishene tse nang le di khomponente tsena kaofela ka phropoushene tse nepahetseng.

2.2.1 Qolla khomponente ya fidi e hlophisitsweng e le inorganic seratswaneng se ka hodimo. (1)

2.2.2 Qolla khomponente ya fidi e nang le mosebetsi e lateng:

- (a) E bolokwa ka mokgwa wa glycogen sebeteng (1)
- (b) E hlokeha bakeng sa kgolo, reproduction le production (1)

2.2.3 Fana ka mofuta wa nutrient uptake e sebedisang dicarrier molecule. (1)

2.2.4 Bontsha vithamene / minerale kapa matshwao a deficiency e bontshitsweng ka ditlhaku tse latelang O SE KE wa teroya tafole hape. Ngola karabo e nepahetseng fela pela tlhaku.

VITHAMENE/MINERALE	FUNCTION	DEFICIENCY SYMPTOMS
A	Blood clotting	Poor blood clotting in chickens
Phosphorus	Healthy bones and teeth	B
C	Formation of haemoglobin	Anaemia

(3)

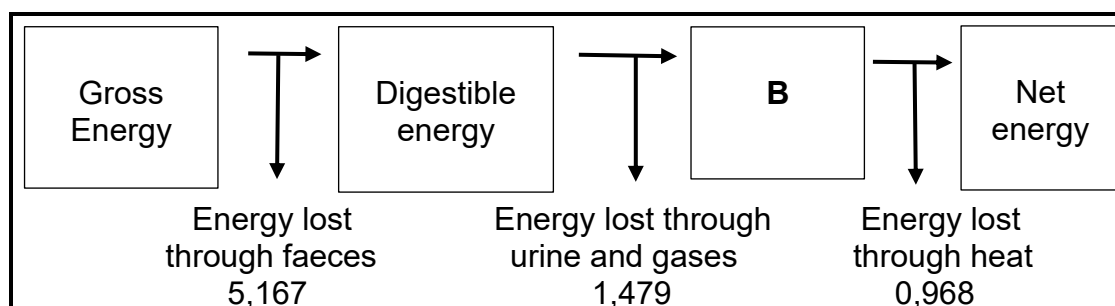
2.3 Velu ya fidi e fumanwa ka ho khaletjhuleitha digestibility co-efficient ya yona. Ho feed trial, kgomo e jele 15 kg ya hay e ommeng mme ya ekheskretha 6 kg ya bolokwe bo e nang le 50% moisture khontente.

2.3.1 Khaletjhuleitha digestibility co-efficient ya hay. Bontsha KAOFELA dikhaltjhuleishene. (5)

2.3.2 Ka bo kguthswane sekaseka digestibility co-efficient e fumanehileng ka hodimo. (1)

2.3.3 Fana ka difeketha tse PEDI tse kanna tsa ama digestibility ya hay. (2)

2.4 Nku e ja 1 kg ya dry matter tsatsi le leng le le leng ho fidi e fomuleithueng, e nang le gross eneji ya 15,648 MJ/kg DM. Flow chart e ka tlase e bontsha di eneji losses (MJ/kg DM).



2.4.1 Bontsha eneji e emetsweng ke **B**. (1)

2.4.2 Khaletjhuleita nett eneji eo nku e ka e fumanang ho tswa ho reishene ya letsatsi ka leng. (3)

2.4.3 Sekaseka khaltjhuleishene ya POTSO 2.4.2 ka hodimo. (1)

2.5 Data e ka tlase e amana le polane ya fodder flow ya nako e nkang dikgwedi tse 6.

FORAGE	Yield (ton/ha)	Area (ha)	July	Aug.	Sept.	Oct.	Nov.	Dec.	DM Sum (tons)
Veld	2,19	40				10	10	20	40
Forage sorghum	12	25					43	30	73
Lucerne	15	15	40	35	52	46	15	30	
Total feeds (t)			40	35	52	56	68	80	
Shortage (t)			11	14	-	-	-	-	25
Surplus (t)			-	-	-	7	15	30	52
Livestock requirement (t)			51	49	52	49	53	50	

2.5.1 Teroya bar graph ho bapisa total feeds le livestock rikhwayamente tsa july ho isa ho December. (6)

2.5.2 Khaletjhuleitha surplus kgweding ya December ka di kg. (2)

2.5.3 Sekaseka dicost-effective measures tse PEDI tseo rapolasi a ka di sebedisang ho sebedisana le surplus kgweding ya December. (2)

[35]

POTSO YA 3: TLHAHISO YA DIPHOOFULO, TSHIRELETSO LE TAOLO

Qala posto ena leqepheng le LETJHA.

3.1 Setshwantsho se ka tlase se bontsha di farming system tsa agriculture.



3.1.1 Qolla farming system e bontshitsweng SETSHWANTSHONG SA B. (1)

3.1.2 Bontsha sepheo sa farming system e boletsweng ho POTSO 3.1.1 ka hodimo. (1)

3.1.3 Hypothesise phrodakethivithi ya farming system SETSHWANTSHONG SA A. (1)

3.1.4 Hlalosa hore difeketha tse ka tlase di ka sebedisitswe ha jwang ho nyolla poordakesehene ho farming system ya extensive.

(a) Reproduction (1)

(b) Nutrition (1)

3.2 Ke di facility dife tseo o kothalletsang hore disebeswe ho dipheo tse latelang:

3.2.1 Ho nyolla thempheritjhara ho maternity section ya di fariki (1)

3.2.2 Ho meintheina thempheritjhara ka diteraktjheng tsa matlo (1)

3.2.3 Bakeng sa ho fepa dikgoho (1)

- 3.3 Kaofela diphoofolo tsa polasing di homeothermic. Karolo ya fid eo phoofolo e e jeleng e sebediswa ho boloka phoofolo e fuhumetse ha e setseng e sebediswa ho diphrosese tse bohlokoa tsa bophelo. Dithempheritjhara tse fetisisang di ka ama enoji e teng ya di phrosese tsena ha hampe.

3.3.1 Hlalosa lentswe le sehelleltsweng seratswaneng se ka hodimo. (2)

3.3.2 Sajeseta tsela e LENNGWE eo rapolasi a ka tshireletsang diphoofolo ka yona mabapi le themperitjhara tse fetisisang ho extensive phrodakeshene system. (1)

3.3.3 Hlalosa kamano dipakeng tsa feed intake, water intake le productivity ya phoofolo tlasa dithemperitjhara tse hodimo ka hofetisisa. (3)

- 3.4 Setshwantsho se ka tlase se bontsha karolo ya animal handling facility.

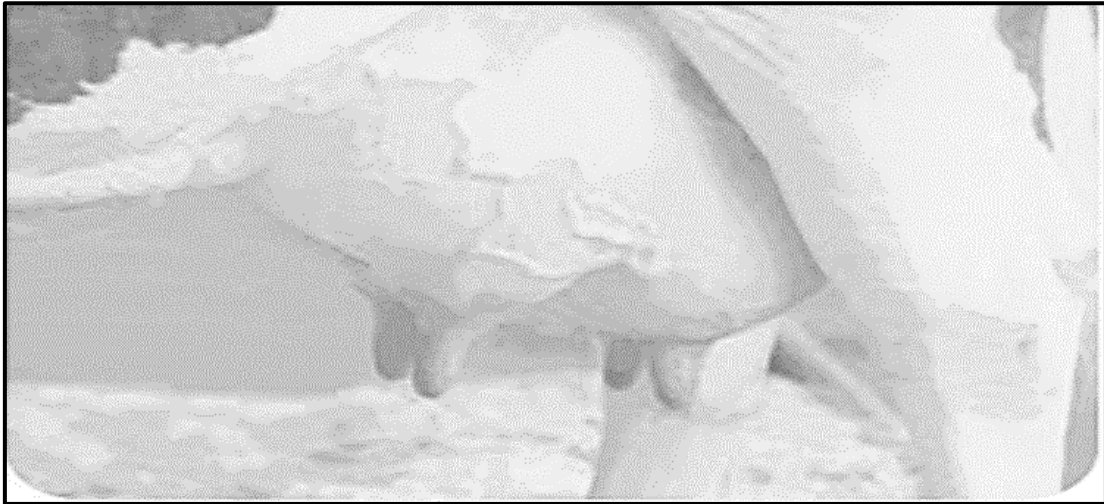


3.4.1 Fana ka lebitso la pen e ka hodimo. (1)

3.4.2 Fana ka didesign feature tse PEDI tseo o di kgothalletsang rapolasi ho di ela hloko ha a rala facility. (2)

3.4.3 Bolela mosebetsi o le MONG wa facility e ka hodimo. (1)

3.5 Setshwantsho se ka tlase se bontsha letswale le infected.



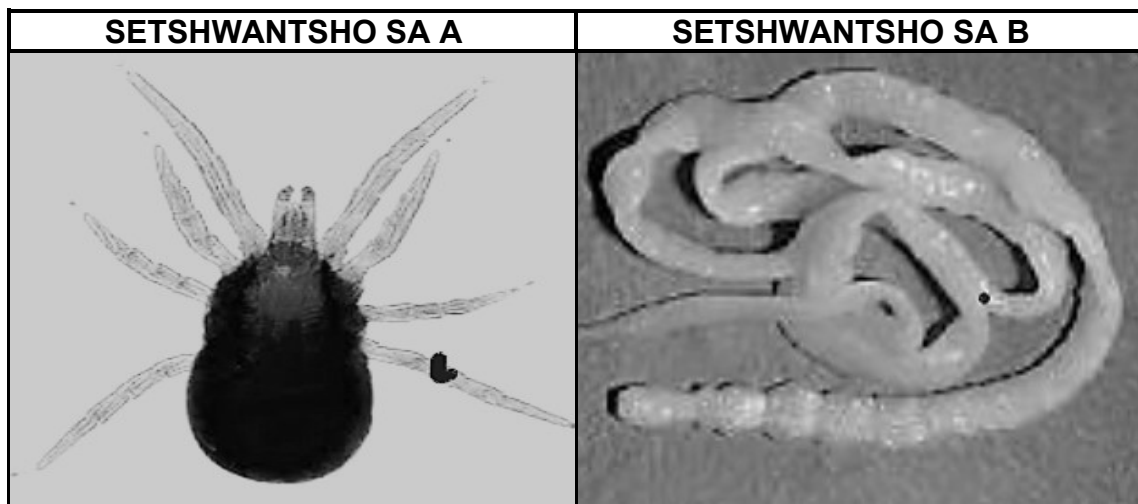
3.5.1 Hlwaya lefu le amang letswale la kgomo jwalo ka ha ho bontshitswe setshwanthong se ka hodimo. (1)

3.5.2 Hlophisa lefu le boletsweng POTSONG YA 3.5.1 ka hodimo, oikamahantse le kokwanahloko e e bakang. (1)

3.5.3 Fana ka matshwao a MABEDI tse bontshwang ke phoofolo a nang le lefu lena. (2)

3.5.4 Hlalosa di economic implication tse PEDI tsa lefu lena ho rapolasi. (2)

3.6 Ditayakeramo tse ka tlase dibontsha di pharasaete tse hlaselang diphoofolo.



3.6.1 Hlophisa di pharasaete tse SETSHWANTSHONG SA **A** le **B**. (2)

3.6.2 Fana ka lebitso la lefu le bakwang ke microscopic parasite e SETSHWANTSHONG SA **A**. (1)

3.6.3 Fana ka matshwao a MABEDI a lefu le boletsweng POTSONG YA 3.6.2. (2)

3.6.4 Fana ka diconrol measure tse PEDI tsa pharasaete e SETSHWANTSHONG SA **B**. (2)

3.7

Letswai ke engwe ya diminerale tse bohlokwa tse hlokwang ke diphoofolo tsohle tseo ha ngata di nang le diet e sa nepahalang diphoofolong tse fulang. Letswai ha nagata le tswakwa le di consetreitsi ho etsa minirale lick ya di dikgomo tse fulang. Tlasa maemo a itseng, ho ja letswai le lengata ho ka ba kotsi diphoofolong. Excessive salivation, ho pipitlelwa le ho nyorwa haholo ke bopaki bo phethahetseng. Ho shwa ha di phoofolo ho ka ba teng moo ho e nang le concentration e ngata ya letswaimetsing a ho nwa, kapo ha ho ena le phokolo ya metsi a ho nwa.

3.7.1 Hlwaya matshwao a MABEDI a salt poisoning a tlwaelehleng, ho tloha seratswaneng se ka hodimo, tse ka hlokomelehang diphoofolong tsa polasing. (2)

3.7.2 Fana ka preventative measure e le NNGWE ya salt poisoning. (1)

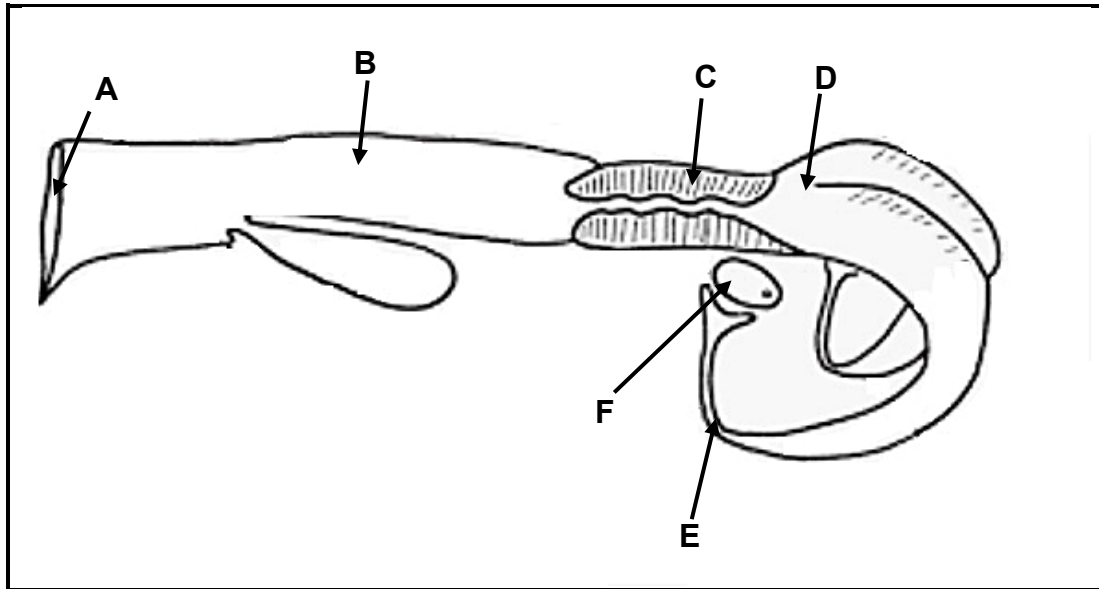
3.7.3 Fana ka karolo e LENNGWE ya mmuso tshireletsong diphoofolo. (1)

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POTSO YA 4: ANIMALE REPORODAKESHENE.

Qala potso ena leqepheng le LETJHA.

4.1 Tayakeramo e ka tlase e bontsha ditho tsa rephrodakeshene ya kgomo.



4.1.1 Hlwaya phoofolo ya polasi e nang le reproduction system e ka hodimo. (1)

4.1.2 Fana ka di karolo tse leibotsweng **B** le **E**. (2)

4.1.3 Bontsha ka ho ngola TLHAKU fela e tsamaelanang le karolo moo tse latelang di etsahalang:

(a) Ho hlahiswa di-oocyte (1)

(b) E tshireletsa popelo kgahalano le external environment (1)

4.2 Oestrus cycle ke saekele e hormonally controlled di kgomong tse tshehadi tse sexually active. E bonahala ka mekgahlelo e mene, e leng pro-oestrus, oestrus, met-oestrus le di-oestrus.

4.2.1 Bontsha nako ya saekele e bonahalang fomeisheneng ya corpus luteum. (1)

4.2.2 Fana ka lebitso la hormone e bakeng ovulation ka nako ena ho POTSO 4.2.1 hodimo. (1)

4.2.3 Hlalosa lentswe le sehetsweng mola seratswaneng seka hodimo. (2)

4.2.4 Fana ka mekgwa e MEBEDI ya ho bona dikgomo tse palesitseng. (2)

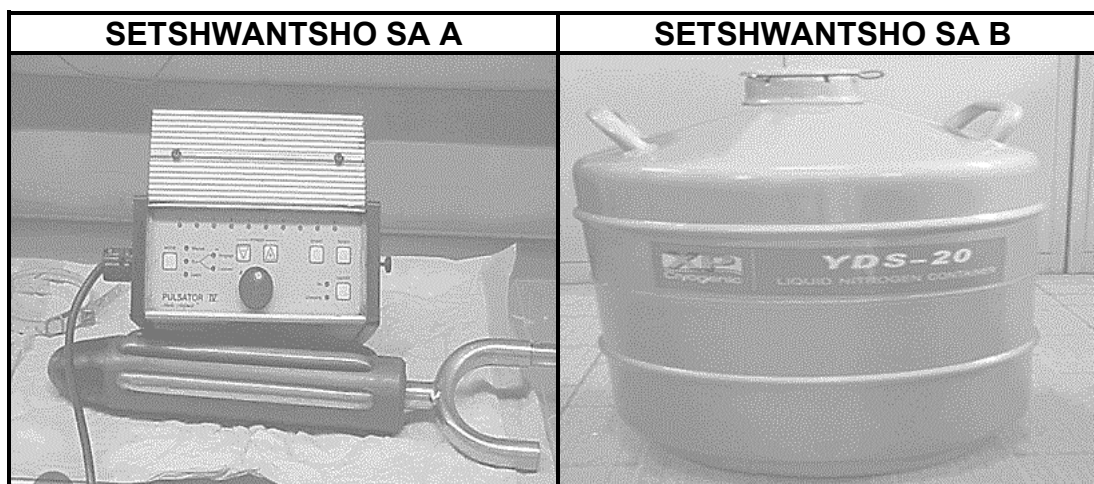
- 4.3 Setshwantsho se ka tlase se bontsha e nngwe ya mekgahlelo ya meithing dikgomong.



- 4.3.1 Bontsha mokgahlelo wa meithing o bontshitsweng ke setshwantsho se ka hodimo. (1)

- 4.3.2 Hlwaya di feketha tse PEDI tse bakang meithing behaviour dipohong. (2)

- 4.4 Disebediswa tse ka tlase di sebediswa ke bo rapolasi ho rephrodakeshene ya diphoofole.



- 4.4.1 Fana ka lebitso la se sebediswa se se SETSHWANTSHONG SA A. (1)

- 4.4.2 Bontsha mosebetsi wa sesebediswa se boletsweng POTSONG YA 4.4.1. (1)

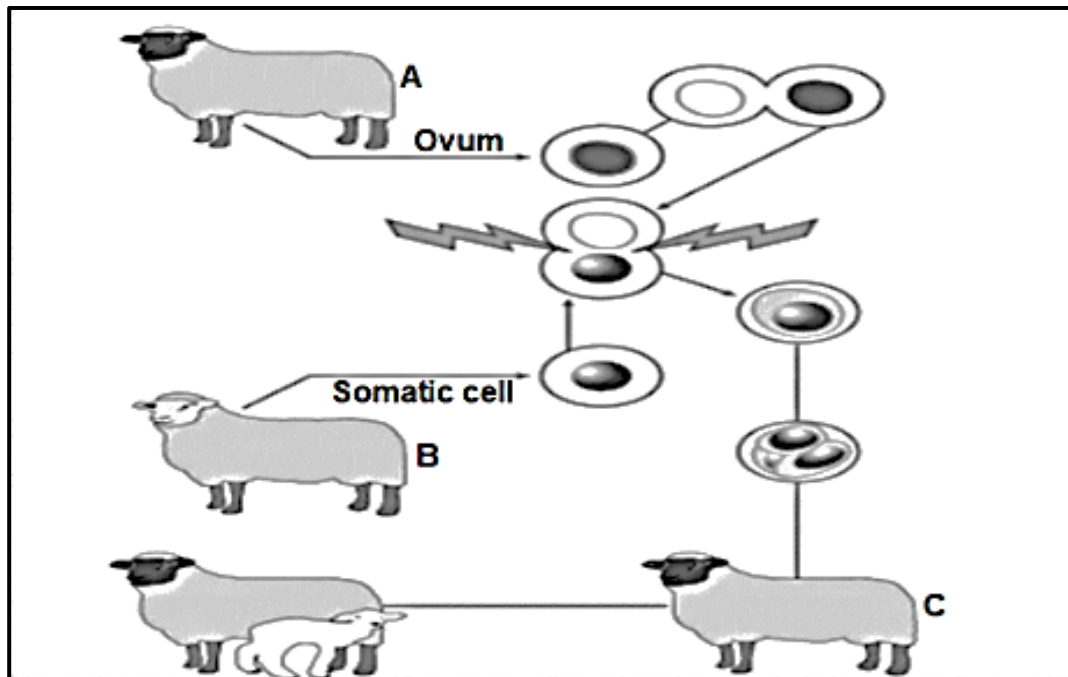
- 4.4.3 Bolela themperitjhara rikhwayamente ya semen e bokelletsweng SETSHWANTSHONG SA B. (1)

4.4.4 Hlalosa mesebetsi ya disemen dilutant tse ka tlase:

- (a) Buffers (1)
- (b) Egg yolk (1)
- (c) Antibiotics (1)

4.4.5 Hlalosa ka bokgutshwanyane nako e nepahetseng ya artificial insemination. (2)

4.5 Tayakeramo e ka tlase e bontsha animal rephrodakeshene thekenikii ya se modene.



4.5.1 Bontsha procedure e tayakeramong e ka hodimo. (1)

4.5.2 Fana ka lebitso la phoofolo **C** ho procedure e boletsweng POTSONG 4.5.1. (1)

4.5.3 Hlahloba ho lokela ha reproductive technique e ka hodimo e ka sebediswang ke disubsistence farmer. (1)

4.5.4 Tshehetsa karabo ya hao POTSONG YA 4.5.3 ka hodimo. (1)

- 4.6 Setshwantsho se ka tlase se bontsha mogahlelo o bohlokwa wa rephrodakeshene diphoofolong.



- 4.6.1 Bontsha phrosese e bontshitsweng setshwantshong se ka hodimo. (1)
- 4.6.2 Bontsha boemo bo ka bang kgahlano le le porosese e ka hodimo. (1)
- 4.6.3 Fana ka dintho tse PEDI tse ka bakang boemo bo boletsweng POTSONG YA 4.6.2. (2)
- 4.6.4 Ka tlase ke mekgahlelo ya rephrodakeshene dikgomong, lokisa di mekgahlelo ena mme o e ngole ka tatellano. Ngola tlhaku FELA.
- A Parturition
 B Conception
 C Gestation
 D Fertilisation
 E Ejaculation

(5 x 1) (5)
[35]

MATHSWAO A KAROLO YA B: 105
MATSHWAO KAOFELA: 150